

# Weekly COVID-19 Breakthrough Infections Report

## Clark County, Nevada

**Date: February 7, 2023**

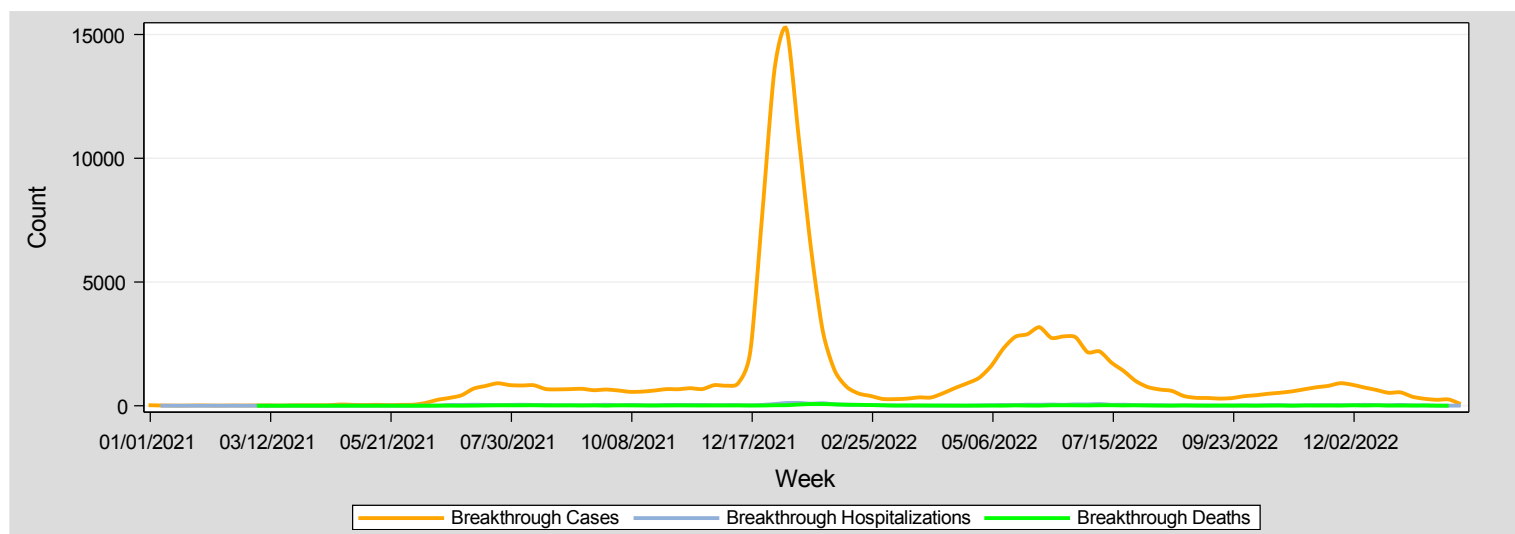
Breakthrough cases are U.S. residents with a SARS-CoV2 RNA or antigen detected on respiratory specimen collected greater than or equal to 14 days after completing the primary series of an FDA authorized COVID-19 vaccine (i.e., complete vaccination). Complete vaccination is two doses of the Pfizer or Moderna vaccine or one dose of the Johnson and Johnson (Janssen) vaccine.

Exclusion Criteria: The persons who were recently positive for COVID-19, defined as a positive <45 days prior to the current positive test under investigations were excluded.

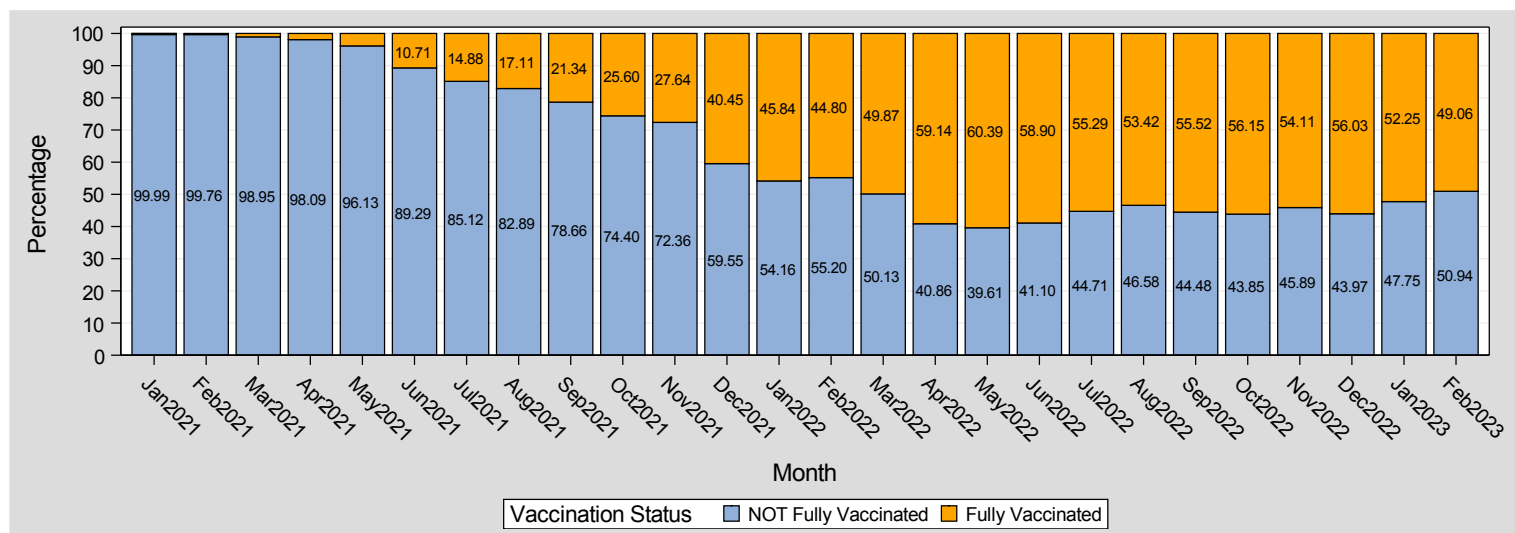
Given the large number of people being vaccinated in the United States and the high level of ongoing SARS-CoV-2 circulation, thousands of symptomatic vaccine breakthrough cases are expected, even if the vaccines remain as effective as demonstrated during the clinical trials.

Following data have been obtained by matching COVID-19 cases information from Trisano (SNHD's surveillance system) to immunization records from Nevada WebIZ (Immunization database). Data is considered preliminary and subject to change.

**Figure 1: Trends in Breakthrough Cases, Deaths and Hospitalizations**



**Figure 2: Percentage of Cases among 12 Years and Older By Vaccination Status**



**Table 1: Population Characteristics of COVID-19 Breakthrough Cases**

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	130076	100
<b>Age (in years)</b>		
<i>0-4</i>	10	0
<i>5-11</i>	1568	1
<i>12-17</i>	5973	5
<i>18-24</i>	11102	9
<i>25-49</i>	56749	44
<i>50-64</i>	31003	24
<i>65+</i>	23671	18
<b>Gender</b>		
<i>Male</i>	56708	44
<i>Female</i>	72401	56
<i>Unknown</i>	967	1
<b>Race/Ethnicity</b>		
<i>Hispanic</i>	26873	21
<i>White</i>	41525	32
<i>Black</i>	10246	8
<i>API</i>	16672	13
<i>AEA</i>	451	0
<i>Other</i>	9208	7
<i>Unknown</i>	25101	19
<b>Travel History</b>		
<i>Yes</i>	5672	4
<i>No</i>	35996	28
<i>Unknown</i>	88408	68
<b>Hospitalization</b>		
<i>Yes</i>	3381	3
<i>No</i>	40641	31
<i>Unknown</i>	86054	66
<b>Death</b>		
<i>Yes</i>	1210	1
<i>No</i>	10068	8
<i>Unknown</i>	118798	91
<b>Vaccine Type</b>		
<i>Pfizer</i>	86930	67
<i>Novavax</i>	5	0
<i>Unknown</i>	1120	1
<i>Moderna</i>	34967	27
<i>Janssen</i>	7053	5
<i>Emergen</i>	1	0
<b>Underlying Conditions</b>		
<i>Yes</i>	19942	15
<i>No</i>	110134	85

**Table 2: Breakthrough Case Rates**

Fully Vaccinated Population*	Vaccinated Cases	Unvaccinated Population	Unvaccinated Cases	Vaccinated Case Rate per 100K population	Unvaccinated Case Rate per 100K population
877493	130076	1440681	468188	14824	32498

**Table 3: Population Characteristics of COVID-19 Breakthrough Hospitalizations**

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	3381	100
<b>Age (in years)</b>		
<i>5-11</i>	5	0
<i>12-17</i>	19	1
<i>18-24</i>	34	1
<i>25-49</i>	342	10
<i>50-64</i>	587	17
<i>65+</i>	2394	71
<b>Gender</b>		
<i>Male</i>	1836	54
<i>Female</i>	1541	46
<i>Unknown</i>	4	0
<b>Race/Ethnicity</b>		
<i>Hispanic</i>	422	12
<i>White</i>	1972	58
<i>Black</i>	380	11
<i>API</i>	332	10
<i>AEA</i>	15	0
<i>Other</i>	101	3
<i>Unknown</i>	159	5
<b>Travel History</b>		
<i>Yes</i>	144	4
<i>No</i>	1733	51
<i>Unknown</i>	1504	44
<b>Death</b>		
<i>Yes</i>	856	25
<i>No</i>	608	18
<i>Unknown</i>	1917	57
<b>Vaccine Type</b>		
<i>Pfizer</i>	1963	58
<i>Unknown</i>	86	3
<i>Moderna</i>	1082	32
<i>Janssen</i>	250	7
<b>Underlying Conditions</b>		
<i>Yes</i>	2438	72
<i>No</i>	943	28

**Table 4: Population Characteristics of COVID-19 Breakthrough Deaths**

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	1210	100
<b>Age (in years)</b>		
25-49	37	3
50-64	145	12
65+	1028	85
<b>Gender</b>		
Male	729	60
Female	481	40
<b>Race/Ethnicity</b>		
Hispanic	131	11
White	815	67
Black	127	10
API	115	10
AEA	6	0
Other	10	1
Unknown	6	0
<b>Hospitalization</b>		
Yes	856	71
No	77	6
Unknown	277	23
<b>Vaccine Type</b>		
Pfizer	664	55
Unknown	29	2
Moderna	395	33
Janssen	122	10
<b>Underlying Conditions</b>		
Yes	694	57
No	516	43

**Table 5: Breakthrough Death Rates**

Fully Vaccinated Population	Vaccinated Deaths	Unvaccinated Population	Unvaccinated Deaths	Vaccinated Death Rate per 100K population	Unvaccinated Death Rate per 100K population
877493	1210	1440681	8082	138	561

\* Please note that the numbers reported for fully vaccinated in the above table may not reflect the total number of completed doses reported on the SNHD dashboard. The CDC considers people to be fully vaccinated 2 weeks after their second dose in a 2-dose series, such as the Pfizer or Moderna vaccines, or 2 weeks after a single-dose vaccine, such as Johnson & Johnson's Janssen vaccine.

**Table 6: Breakdown of COVID-19 Breakthrough Hospitalizations according to Underlying conditions**

Variable	Outcome	N	%
Underlying Medical Condition	Yes	2438	72
	No	943	28
Hypertension	Yes	1558	N/A
Immunocompromised	Yes	137	N/A
Chronic Heart Disease	Yes	730	N/A
Chronic Liver Disease	Yes	63	N/A
Chronic Kidney Disease	Yes	479	N/A
Diabetes	Yes	914	N/A
Neurologic/Neurodevelopmental	Yes	201	N/A
Chronic Lung Disease	Yes	643	N/A
Historically Healthy	Yes	293	N/A

**Table 7: Breakdown of COVID-19 Breakthrough Deaths according to Underlying conditions**

Variable	Outcome	N	%
Underlying Medical Condition	Yes	694	57
	No	516	43
Hypertension	Yes	446	N/A
Immunocompromised	Yes	50	N/A
Chronic Heart Disease	Yes	250	N/A
Chronic Liver Disease	Yes	25	N/A
Chronic Kidney Disease	Yes	188	N/A
Diabetes	Yes	266	N/A
Neurologic/Neurodevelopmental	Yes	61	N/A
Chronic Lung Disease	Yes	198	N/A
Historically Healthy	Yes	26	N/A

- Notes:**
- \* White, Black, Asian, and AEA are non-Hispanic. AEA=American Indian/Eskimos/Alaskan Natives & API=Asian Pacific Islander
  - \* The report does not include breakthrough hospitalizations from State approved facilities as State is responsible for their investigation.
  - \* The breakdown of underlying conditions are not mutually exclusive (i.e., a person can have more than one risk factor).